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STUDIES IN PHILIPPINE JASSOIDEA, IV: THE IDIOCERINI OF
THE PHILIPPINES

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TWENTY-THREE TEXT FIGURES

The Jassoidea of the subfamily Bythoscopinæ are surprisingly well represented in the Philippines, especially in the tribe Idiocerini. They include some economically very important insects. Two of the species are controlling factors in the fruiting of mangoes in many parts of these Islands, and the life histories of these need careful investigation, looking toward methods of control. The benefit that the Filipinos ascribe to the smudging of the trees at the time of flowering comes through the driving out of the swarms of these injurious insects, which frequent the flower clusters.

Taxonomic work in these groups is exceedingly difficult. All of the oriental species in the Idiocerini would have been referred without question to *Idiocerus* twenty years ago. No one would have thought of separating "genera" out of so homogeneous a group. However, Distant has separated three critical genera without fully diagnosing them, and Kirkaldy separated two—one critically separated group, and one very well marked. In continuing the study of oriental material, there are two alternatives—to make all of the genera described by Distant and one described by Kirkaldy subgenera of *Idiocerus*, or to follow their lead to its logical conclusion and separate a number of additional coördinate groups as genera. The latter course is followed in this paper, although the entire subject will have to be reviewed and readjusted in connection with extensive European, African, and American material. This will leave entomologists to their

own inclinations as to whether they dub these groups genera or subgenera.

It is doubtful if any of the species under *Idiocerus* in the Fauna of British India are typical *Idiocerus*, and it is impossible from the meager descriptions there given properly to refer all of them. *Idiocerus niveosparsus* is apparently a *Chunra*, *I. clypealis* is an *Idioscopus*, and *I. unimaculatus* is apparently a *Pedioscopus*. The remainder of the species there described appear, from the color descriptions, to be different from anything known to me in the Philippines.

The structure and sculpturing of head, the proportions of head, pronotum, and scutellum, the venation of tegmina, the sculpturing of scutellum, and the form of genitalia must be fully described or figured for these species, or their certain identification will be impossible. Some of the species are remarkably similar in coloration, and some are very variably colored. Some of the species show a remarkable sexual dimorphism in colors, particularly on the face, to which I have called attention in the following descriptions.

There are few single characters which could be used for safe generic separation in the *Idiocerini*, since most of the characters are subject to more or less variation or even lapse in abnormal cases. The average condition must be used, and the general habitus and general census of characters must be constantly considered. The habitus does not always lend itself to clear description, but is readily appreciable in figures or specimens. The following synopses are not comprehensive and are intended only to show the relationships of the forms occurring in the oriental fauna.

BYTHOSCOPINÆ

Synopsis of the tribes.

- a*¹. Tegmina with an appendix (usually very large); pronotum with a very narrow connection with propleuræ, or a visible connection lacking; head usually wider than pronotum, rarely not as wide or only as wide. Idiocerini.
- a*². Tegmina usually without a distinct appendix, or, if with a very small and narrow one, then vertex usually considerably longer at middle than at sides; pronotum usually broadly connected with propleuræ, a carina usually separating the two.
- b*¹. Head about as wide as, or wider than, pronotum; as seen from above often strongly angulate; face about as long as wide or longer; supra-antennal ledges usually very weak; the scrobes usually shallow Agalliini.
- b*². Head usually distinctly narrower than pronotum; as seen from above usually very broadly rounded; face wider than long; supra-antennal ledges very strong; antennal scrobes deep..... Bythoscopini.

IDIOCERINI

Diagnostic synopsis of the genera.

- a*¹. Head very short and much wider than the very short and very broad pronotum; vertex shorter at middle than at eyes, where its anterior margin is strongly sinuate; face with width once and a half the length, front far wider than long; supra-antennal ledge falling far short of reaching eye; clypeus parallel-sided; tegmina very broad; first antepical cell confluent with median, the second being the only closed antepical; closed apical cells five, but with supernumerary subobsolete cells in apical portion of costal area..... Ipo Kirk.
- a*². Head, etc., not as above.
- b*¹. Scutellum, and clypeus at least in part, more or less tumidly elevated; upper lateral sutures of the front usually strong to the ocelli; loræ acute above; scutellum very large, distinctly longer than head and pronotum together.
- c*¹. Head as wide as pronotum; appendix scarcely reaching apex of corium, and about as wide as second apical cell; vertex shagreened and slightly shorter at middle than at eyes; venation indistinct proximad of apical cross veins; first apical cell twice the width of fourth, which is far shorter than third; pronotum two and a half times as wide as long, its hind margin very slightly incurved; loræ shorter than clypeus and lying in same plane as genæ; supra-antennal ridge strongly sinuate, producing a distinct lobe next front; clypeus broader at base than at apex Iposcopus gen. nov.
- c*². Head usually wider than pronotum; vertex as long at middle as at eyes or longer; venation usually strong proximad of apical cross veins; outer apical cell in tegmina separated from outer subapical by a cross vein, thus three subapical cells; first apical cell about same width as fourth, which is about same length as third; pronotum less than two and a half times as wide as long, its hind margin strongly incurved; loræ longer than clypeus; supra-antennal ledge evenly curved, not producing a lobe next front; clypeus usually distinctly broader at apex than at base.
- d*¹. Five apical cells in tegmina; first subapical cell about as large as second or as third; appendix scarcely reaching apex of corium and about as wide as second apical cell; head finely shagreened; loræ lying in same plane as genæ; frontoclypeal suture distinct..... Ipcerus gen. nov.
- d*². Four apical cells in tegmina; first subapical cell much smaller than second or than third; appendix surrounding apex of corium and wider than second apical cell; vertex and upper part of face cross striate; loræ tumidly elevated; fronto-clypeal suture obsolete Chunra Dist.
- b*². Scutellum and clypeus not at all tumidly swollen; upper lateral sutures of front usually not equally distinct near ocelli and near scrobe; scutellum of medium size, rarely as long as, usually distinctly shorter than, pronotum and vertex together.
- c*¹. Outer apical cell in tegmina separated from outer subapical by a cross vein, thus three subapical cells; vertex normally transversely wrinkled, usually very short and very broad; clypeus usually with

- sides strongly incurved and suddenly and strongly broadened apically *Idiocerus* Lewis.
- c². Outer apical cell in tegmina continuous with the outer subapical, the cross vein lacking (always to be examined by transmitted light), thus never more than two closed subapical cells; vertex usually longer at middle than next eyes, and very long for this group, in proportion to width between eyes.
- d¹. Upper lateral sutures of front obsolete, the lower lateral sutures continuous with the supra-antennal ridges, the front thus very broadly open above; ocelli nearer to eyes than to median line, or as near..... *Busonia* Dist.
- d². Upper lateral sutures of front distinct, always distant more than half the distance from supra-antennal ridges to ocelli; ocelli rarely much nearer to eyes than to median line of face.
- e¹. Upper lateral sutures of front each directed toward the inner margin of the ocellus of the same side or nearly so; head distinctly wider than pronotum.
- f¹. Tegmina with three apical cells and without subapicals. *Balocha* Dist.
- f². Tegmina with four apical cells.
- g¹. Subapical cells absent..... *Pedioscopus* Kirk.
- g². Subapical cells (one or two) present... *Idioscopus* gen. nov.
- e². Upper lateral sutures of front strongly incurved, and from near scrobes each directed toward the ocellus of the opposite side, the front thus appearing far broader than long, and with very strong lateral angles; head about as wide as pronotum; second apical cell pedunculate in present species; first apical cell much broader and shorter than fourth; ocelli nearer to median line than to eyes.. *Idiocerinus* gen. nov.

Genus IPOSCOPUS novum

Type, *Iposcopus distanti* sp. nov.

Synopsis of the species.

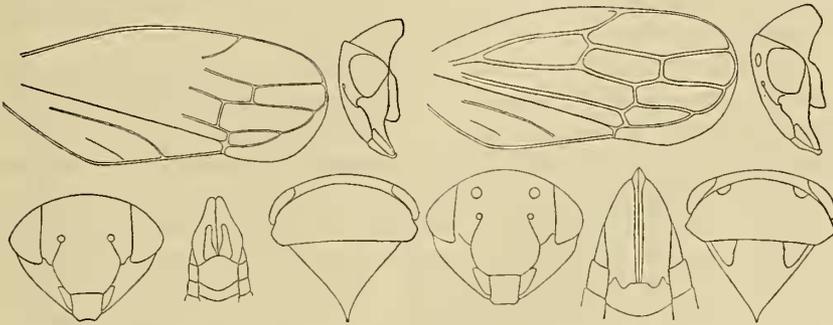
- a¹. Cross vein at base of third apical cell antenodal; head slightly wider than pronotum; colors dark and sharply contrasted....*distanti* sp. nov.
- a². Cross vein at base of third apical cell postnodal; head slightly narrower than pronotum; colors pale, markings ill defined.....*breviceps* sp. nov.

Iposcopus distanti sp. nov.

Length, 4.5 mm.; width of head, 1.8 mm. Head straw-colored with dark mottlings on upper part of face, including two irregular dark spots between ocelli and upper margin; clypeus, loræ, and lower part of cheeks blackish. Pronotum brownish, two small transverse dashes back of eyes blackish, and hind margin yellowish. Scutellum brown, with two black basal lunulæ and a broad, bright yellow transverse band back of middle; the apex brown. Mesopleuræ blackish. Tegmina brown, with a narrow transverse band near base, nearly continuous with that on scu-

tellum, and a short transverse commissural ivory-white mark on clavus at apex of inner claval vein; a large irregularly triangular clear area at basal third of costa, and another of same size at apical third; appendix smoky. Sternum and legs straw-colored, the fore tibiæ blackish, the middle tibiæ darkened. Abdomen yellow at base, the genitalia blackish.

Head very finely shagreened throughout, very slightly wider than pronotum; the length of vertex into width between eyes, eleven times; vertex as long at middle as at eyes. Face broader than long; ocelli nearer to eyes than to median line; front more than a fourth broader than long;¹ clypeus broader than long, apical margin slightly incurved; loræ very small, scarcely longer than clypeus, and not one half as wide. Width of pronotum two and a half times the length, nearly seven times as long as

FIG. 1. *Ipsocopus distanti* sp. nov.FIG. 2. *Ipsocopus breviceps* sp. nov.

the vertex, the hind margin slightly incurved; surface finely shagreened, with remote and very shallow and irregular subobsolete transverse wrinkles and with scattering and remote darker punctures. Scutellum longer than head and thorax together; the transverse impressed line evenly but not strongly arcuate and with a small fovea anterior to each lateral extremity; median area just posterior to transverse impression, with about five sharply impressed fine transverse lines. Tegmina slightly roughened basally and with punctures along the veins; veins subobsolete basally and remainder slender. Anal segment of male medially produced and strongly longitudinally carinate; pygofer thick, apically subterete, and with a curved longitudinal carina on lower surface.

MINDANAO, Butuan (*coll. Baker*).

¹ Length of front is measured from frontoclypeal suture to a line drawn between ocelli.

Iposcopus breviceps sp. nov.

Length, 5 mm.; width of head, 1.8 mm. Straw-colored with darker mottlings. Face with two small black spots midway between ocelli and upper margin, with large dark mottling on upper portion and with smaller and more sharply defined markings on lateral fields of front; apical half of clypeus, except middle of apical margin, blackish. Pronotum with small, indistinct, darker mottlings, these larger and darker near the lateral angles, and with two small round black spots on anterior margin just within eyes. Scutellum with basal blackish lunulæ, the central foveæ of middle area darkened. Tegmina semitransparent, brownish, a white dot near base of clavus and another at tip of inner claval vein; veins of corium whitish; corium with whitish mottlings near base and with the area of the large, outer apical cell clearer. Mesopleuræ black-spotted. Tibiæ darkened apically. Abdomen nearly concolorous.

Head very finely shagreened throughout, scarcely as wide as pronotum; length of vertex into width between eyes about eleven times; vertex slightly shorter at middle than at eyes. Face broader than long; ocelli equally distant from eyes and median line; front but little broader than long; clypeus about as broad as long, apical margins but slightly incurved; loræ as long as clypeus and about half as broad. Width of pronotum scarcely two and a half times the length, the length more than seven times that of the vertex; surface finely shagreened and remotely subobsoletely wrinkled and punctured. Sculpturation of scutellum as in *distanti*. Tegmina slightly roughened basally and with punctures along the veins; veins very evident basally. Anal segment of female with hind margin laterally strongly incurved; the lateral angles acutely produced, the median portion subtruncate.

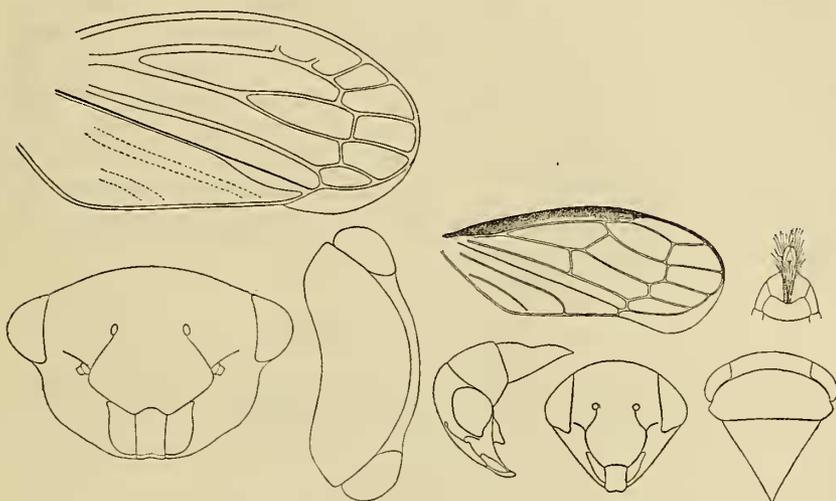
MINDANAO, Butuan (coll. Baker).

Although this form and *I. distanti* are from the same general region, and one is represented only by males and the other only by females, I do not feel justified in placing them as the two sexes of a single species. Striking sexual dimorphism in colors is to be expected in this group, but I have yet encountered no such sexual differences in structure as are exhibited in this case.

Genus IPOCERUS novum

The form here described as the type of a new genus was at first placed in Kirkaldy's genus *Ipo*, following his description. Through the kindness of Mr. Frederick Muir I have been able to examine a specimen of *Ipo conferta* Kirk. from Queensland,

and find that the present form cannot possibly be associated with it. *Ipo* presents a structure of head, clypeus, and loræ very distinct from anything I have yet seen in the Philippine fauna. The tegmina of *Ipo* are quite unique in the Idiocerini, very short and broad, with supernumerary cells outlined in the apical portion of costal area, with the appendix short and broadly extended on to the clavus, and with the claval suture callously thickened toward the apex. The vertex of *Ipo conferta* is very remarkable, the length at eyes being twice that at middle. Neither have I seen any idiocerine insect in the Philippine fauna so large and with a head and pronotum proportionately so broad—the width of the head being 3 millimeters.

FIG. 3. *Ipo conferta* Kirk.FIG. 4. *Ipocerus kirkaldyi* sp. nov.

In some respects *Ipocerus* strongly resembles *Chunra* as described and figure by Distant, but is very distinct in some characters of first importance.

Type, *Ipocerus kirkaldyi* sp. nov.

Ipocerus kirkaldyi sp. nov.

Length, 4.4 mm.; width of head, 1.8 mm. Straw-colored; head, pronotum, scutellum, and tibiae very finely reticulately mottled with brownish. Scutellum with darker clouds at lateral angles, at basal middle, at apex, and three at area of transverse impression. The tegmina are semitransparent, tinted with pale golden brown; the veins are dark brown, and except the apical cross veins, with numerous short white interruptions of varying lengths; the costal vein with four large, rectangular white in-

terruptions in addition to several smaller ones. Abdomen with dark incisures above, venter brownish.

Head very finely shagreened throughout, wider than pronotum, the length of vertex into width between eyes four and two-thirds times; vertex as long at middle as at eyes. Face broader than long; ocelli nearer to median line than to eyes; front about as broad as long; clypeus longer than broad, only slightly broadened apically, the apical margin incurved; loræ a third longer than clypeus and about half as wide. Width of pronotum two and a half times the length, the length about three times that of vertex, the hind margin slightly incurved; surface finely shagreened, medially and on posterior half with rather conspicuous but remote dark punctures. Scutellum about a fourth longer than head and pronotum together, the transverse impressed line strongly angulately bent, the surface posterior to this without transverse wrinkles. Tegmina smooth, shining, and rather thin, with a few punctures along the claval veins; veins strong throughout, the costa conspicuously thickened. Anal segment of female with hind margin truncate or slightly incurved; pygofer long, very slender, and strongly haired, far longer than the lateral plates.

PALAWAN, Puerto Princesa (*coll. Baker*).

Genus **CHUNRA** Distant

The genus *Chunra*, as described by Distant,² is a taxonomic puzzle. The diagnosis is not at all diagnostic, most of the characters mentioned being tribal characters. The pronotum is stated to be "twice as long as vertex," which would be a marked character if true, but the figure shows it three times.

There occur abundantly in the Philippines, as in other Malayan and Indian countries, species of idiocerine insects, swarms of which attack the flowers of mangoes, as is recorded by Distant for the species *niveosparsus* of Lethierry. Distant's figure of *niveosparsus* shows a strong and continuous supra-frontal carina, which seems to be certainly an error, as does also the form of the clypeus. In the species, as it occurs here, the frontoclypeal suture is quite obsolete. Distant's figure shows the ocelli nearer to eyes than to each other, while he describes the genus *Chunra* as having them about as near. In the forms of *niveosparsus* occurring in the Philippines this varies considerably, as I shall show. Indeed, *niveosparsus*, as figured by Distant, fits his description of the genus *Chunra* about as

² Fauna Brit. Ind.—Rhynch. (1907), 4, 185.

well as does his type as figured. There seems to be no doubt that the common mango insects here are forms of *niveosparsus*, and after an extended study of large series of them, I cannot but refer them to *Chunra*, amplifying Distant's description of *Chunra* enough to give it generic standing as compared with *Balocha* and *Busonia*. This, of course, cannot be made final without a careful examination of the structural characters of *puncticosta* Wlk., the type of the genus.

The Philippine forms of *niveosparsus* present wide variations in color of scutellum, as mentioned by Distant for Indian forms, though the general plan of coloration is the same. Three lots of specimens taken at separated points in the Philippines show divergences in coloration and in minor structural characters, and it seems probable that numerous other local forms will be found. Most of the characters used below are variable within narrow limits, averaging as described.

Synopsis of the Philippine varieties of Chunra niveosparsa Leth.

- a*¹. Length of vertex into width between eyes more than six times; first apical cell of tegmina two fifths the length of second.
- b*¹. Distance between ocelli much more than half the width of front; transverse impression of scutellum acutely bent.
- philippinensis var. nov.
- b*². Distance between ocelli one half the width of front; transverse impression of scutellum obtusely bent..... palawanensis var. nov.
- a*². Length of vertex into width between eyes less than six times; first apical cell of tegmina about a fifth the length of second; transverse impression of scutellum acutely bent..... lagunensis var. nov.

Chunra niveosparsa Leth. var. *philippinensis* var. nov.

The variety *philippinensis* differs from typical *niveosparsus*, as described and figured by Distant, as follows: Median basal spot of scutellum always long, narrow, triangular, sometimes obsolete; apex of clavus shining white-spotted; two small, round, submedian spots in posterior field of scutellum.

The following structural characters may be added: Vertex, and face as far as ocelli, thickly arcuately cross striate. Head wider than pronotum, the length of vertex into width between eyes somewhat more than six times; vertex about as long at middle as at eyes. Face about as broad as long; ocelli nearer to median line than to eyes, the distance between ocelli being about the width of an ocellus more than the distance from eye to ocellus; distance between ocelli more than half the width of front; clypeus several times longer than broad, greatly narrowed centrally, the apical margin incurved; loræ longer than clypeus and twice its breadth at middle. Width of pronotum

about two and one-fourth times its length, its length a little more than four times that of the vertex, the hind margin slightly incurved; surface thickly, evenly shagreened. Scutellum longer than head and thorax together; basal field, except lateral margin, shagreened; apical field, except calloused lateral margins, transversely wrinkled, as are also the submargins of basal field; transverse impressed line strongly, angularly bent, open at apex of angle, the lateral limbs arcuate, the space between them transversely wrinkled. Last ventral segment of female very short, its hind margin subtruncate to slightly sinuate. Hind margin of anal segment of male strongly sinuate, the lateral portions sloping, the median strongly obtuse-angularly produced.

LAGUNA, Los Baños (coll. Baker).

Occurring in swarms on mango flowers.

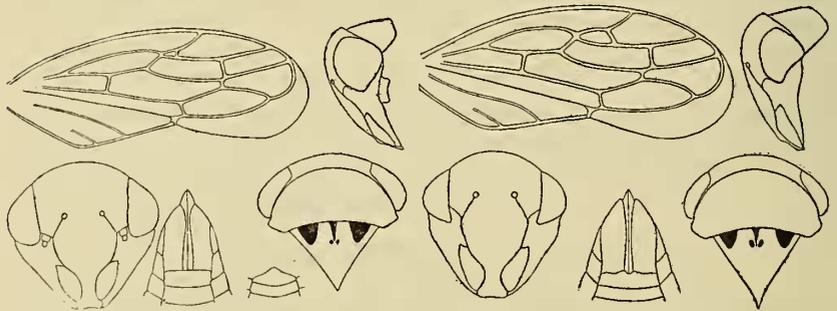


FIG. 5. *Chunra niveosparsa* Leth. var. *lagunensis* var. nov.

FIG. 6. *Chunra niveosparsa* Leth. var. *palawanensis* var. nov.

Chunra niveosparsa Leth. var. *palawanensis* var. nov.

This variety differs from var. *philippinensis* as follows: Distance between ocelli one half of width of front; clypeus somewhat shorter and broader; loræ longer than clypeus, but not twice its breadth at middle; scutellum with transverse impressed line very obtuse-angularly bent, the lateral limbs scarcely arcuate. Hind margin of anal segment of female more strongly sinuate, medially strongly notched.

PALAWAN, Puerto Princesa (coll. Baker).

Chunra niveosparsa Leth. var. *lagunensis* var. nov.

This variety differs from var. *philippinensis* as follows: Length of vertex at middle into width between eyes less than six times; distance between ocelli about half the width of front; loræ less than twice the width of clypeus; hind margin of anal segment of female truncate.

LAGUNA, Pagsanjan (coll. Baker).

Genus **BUSONIA** Distant

The enlarged first apical cell of the tegmina is not at all diagnostic for this genus, as used by Distant, since it occurs in some other genera—in all degrees in *Pedioscopus*. Well shown in the figure of the type, but not mentioned in the genus characterization, however, is a unique character which well distinguishes this genus—the absence of upper lateral sutures of front, the lower lateral margins being continuous with the supra-antennal ridges. *Idiocerus minor* of Bierman³ from Semarang, Java, belongs here, as may be seen at once from the figure of the type. Two very inconspicuous species have been encountered in the Philippines, which are, however, remarkably distinct in their structural characters.

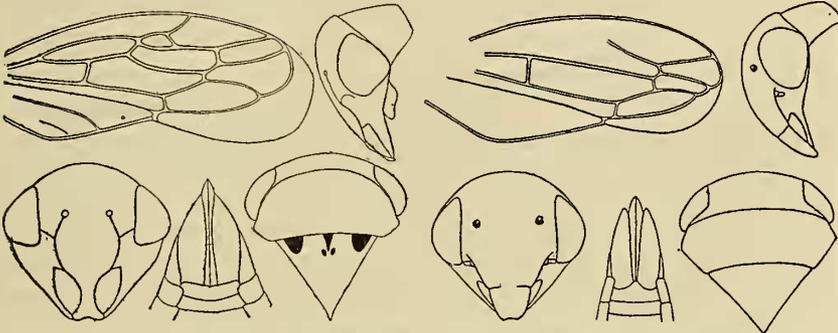


FIG. 7. *Chunra niveosparsa* Leth. var. *philippinensis* var. nov.

FIG. 8. *Busonia scutellaris* sp. nov.

Synopsis of Philippine species of Busonia.

- α¹. Clypeus very broad, convex-sided, and rounded at tip; ocelli nearer to eyes than to median line; cross vein at base of first apical cell and venation proximad of this, obsolete; no subapical cells; the second apical cell broader at apex than at base, the third broader at base than at apex, and the fourth far longer than third; clavus not punctate *scutellaris* sp. nov.
- α². Clypeus narrow, concave-sided, and emarginate at tip; ocelli as near median line as to eyes; venation all distinct; one subapical cell; the second apical cell as broad at apex as at base, the third broader at apex than at base, and the fourth as long as third; clavus with very large dotted punctures..... *mindanaensis* sp. nov.

Busonia scutellaris sp. nov.

Length, 3.5 mm.; width of head, 1.3 mm. Color pale brown with a leaden cast on the pronotum; color of front shading into black on the clypeus (and with minute black spots at ocelli),

³ *Notes Leyden Mus.* (1907), 29, 165.

loræ, and margins of cheeks; apical half of scutellum, legs, meso- and metapleuræ with their sterna, and abdomen, except dorsal disk and genitalia, yellow; hind femora brownish toward tips. Tegmina pale brownish, the costal margin, as far as apical cell, blackish (with a narrow extension along base of first apical cell), the apical margin and appendix smoky, the region of outer apical cell semitransparent.

Head finely shagreened throughout, about equaling pronotum in width, length of vertex into width between eyes two and a half times, vertex distinctly longer at middle than at eyes. Face about as broad as long; ocelli nearer to eyes than to median line; distance between ocelli once and a half the width of clypeus at base; supra-antennal ridges not reaching eyes; frontoclypeal suture obsolete at middle; clypeus very broad at base, gradually narrowed to the somewhat emarginate apex; loræ small, nearly as long as clypeus, but scarcely more than a fifth the width. Width of pronotum two and three-fourths times the length, the length once and a half that of the vertex, anterior and posterior margins subparallel and very gently curved; surface finely, evenly shagreened. Scutellum as long as pronotum and about one half of vertex together; the transverse impressed line strongly, angularly bent, the surface distinctly shagreened only on areas of basal lunulæ, posterior area medially finely carinate. Tegmina impunctate, smooth; radial and claval veins subobsolete; third apical cell narrowed to apex. Hind margin of anal segment of female strongly, medially produced.

MINDANAO, Butuan (*coll. Baker*).

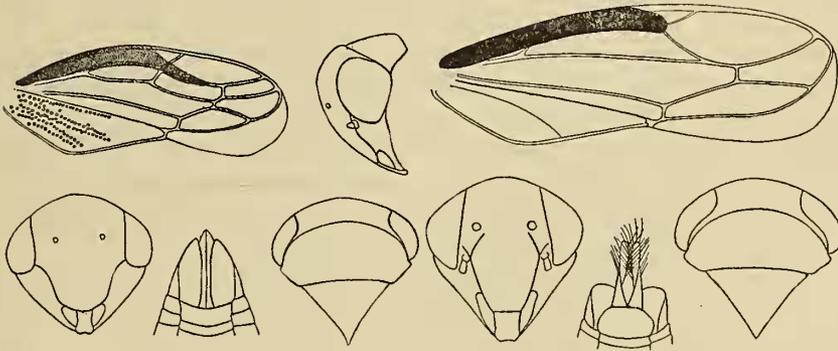
This species closely resembles *B. amentata* Dist. in coloration, but that species is described as having pronotum only slightly longer than vertex, the face yellowish toward apex instead of black, and the figure shows no extension of costal black on tegmina along base of first apical cell. Distant states that the color markings in Indian specimens are very constant.

Busonia mindanaensis sp. nov.

Length, 3.3 mm.; width of head, 1 mm. Ochraceous, genæ below antennæ to loræ black; scutellum brownish; meso- and metapleuræ black; legs very pale straw color; tegmina washed with pale golden brown, the costa basally dark brown to blackish, this color narrowly extended along base of first apical cell; a smoky area in apex of second apical cell, region of first apical cell clearer than elsewhere. Abdomen yellowish, dorsal disk blackish; last ventral segment and ovipositor brownish.

Vertex and upper part of face finely, transversely striate;

genæ with very coarse, oblique wrinkles between antennæ and outer margin; remainder of face finely shagreened. Head distinctly wider than pronotum; length of vertex into width between eyes little less than four times, its length at middle slightly more than at eyes. Face slightly broader than long, ocelli about as near to median line as to eyes; distance between ocelli two and a half times the width of clypeus at base; supra-antennal ridges reaching eyes; frontoclypeal suture distinct; clypeus small, narrow, broader at apex than at base, slightly emarginate at apex; loræ small but broad, more than half the width of clypeus. Width of pronotum two and one-fourth times the length, the length two and a half times that of vertex; anterior margin distinctly more strongly arcuate than posterior; surface coarsely shagreened. Scutellum as long as pronotum and one

FIG. 9. *Busonia mindanaensis* sp. nov.FIG. 10. *Balocha busonioides* sp. nov.

third of vertex together, entire surface of anterior field coarsely shagreened, posterior field minutely, transversely rugose; transverse impressed line slightly bent at middle, the lateral extremities transverse. Tegmina very coarsely thimble-pitted along the veins, these pits much more numerous and conspicuous on clavus and base of corium where they are centrally pimped. Veins more distinct than in *B. scutellaris*, the third apical cell broadened apically. Last ventral segment and pygofer of female pale brown, and ovipositor dark brown, in striking contrast to color of remainder of venter. Hind margin of anal segment of female subtruncate.

MINDANAO, Iligan (coll. Baker).

These two species illustrate, at its best, the remarkable divergence in structural characters among some of these idiocerine insects, in spite of the unusual homogeneity in general habitus.

Genus *BALOCHA* Distant

The genus *Balocha* represents an extreme reduction in the venation of the tegmina, this being the only character of possibly generic value mentioned by Distant. I believe that the type should be reëxamined as to the exact form of the front, since the figure of the type shows a condition in the upper lateral sutures that is certainly open to question. The Philippine species placed here would be classified under *Busonia* in Distant's synopsis, and even resembles *Busonia* in color plan, but the facial characters in *Busonia* are unmistakable.

Balocha busonioides sp. nov.

Length, 4 mm.; width of head, 1.3 mm. Color sordid ochraceous above, very pale straw color below; head with two adjoining dark clouds on upper part of face, small black spots next ocelli, and dark clouds between ocelli and eyes; an indistinct and very oblique craticulum on front; pronotum olive-tinted; basal area of scutellum brownish; tegmina semitransparent with brown veins, tinted with golden brown, darker basally, costa broadly dark brown or black as far as the first apical cell; clavus with a narrow yellowish stripe lying next basal half of commissure; abdomen with more or less of dorsum and side plates of genitalia dark-colored; mesopleuræ with black spots.

Head and pronotum shagreened throughout, this shagreening somewhat transverse on vertex. Head distinctly wider than pronotum; length of vertex into width between eyes two and three-fourths times, its length at middle slightly greater than that at eyes. Face distinctly longer than broad; ocelli nearer to eyes than to median line; distance between ocelli nearly twice the width of clypeus at base; length of front once and a fourth the width; clypeus small, short, about as broad at apex as at base, tip emarginate; loræ longer than clypeus and about half as wide. Width of pronotum two and a half times the length, the length two times that of vertex; anterior margin slightly arcuated, posterior margin nearly straight. Scutellum as long as pronotum and one third of vertex together; surface evenly shagreened throughout; transverse impressed line strong, obtuse-angularly bent, apex widely open, the lateral limbs straight. Tegmina smooth, thin, with a few very minute punctures on clavus, which has only one evident discal vein. Hind margin of anal segment of male strongly rounded at sides, truncate medially; pygofers very slender, thin, twisted, and long-haired.

LUZON, Mount Maquiling (*coll. Baker*).

Genus **PEDIOSCOPIUS** Kirkaldy

Following Kirkaldy's description, I had temporarily placed a number of Philippine insects in the genus *Pedioscopus*. A later comparison with specimens of *P. agenor* Kirk. (see figure) kindly sent to me by Mr. Frederick Muir, of the Hawaiian Sugar Planter's Association, makes this reference certain, and enables me to show that this genus is extensively represented in this Archipelago. It includes some of our most highly colored members of the family.

Synopsis of the Philippine species of Pedioscopus.

- a*¹. Vertex transversely wrinkled; second apical cell in tegmina not pedunculate; sides of front strongly angled below antennæ; head in female with four large, round black spots (lacking in male), and pronotum with two round black spots..... *disjunctus* sp. nov.
- a*². Vertex shagreened; sides of front not strongly angled below antennæ.
- b*¹. Pronotum far more than two times as long as vertex; length of vertex into width between eyes more than four times; second apical cell of tegmina not pedunculate; scutellum as long as pronotum and vertex together.
- c*¹. Loræ longer than clypeus; color yellowish ochraceous; length 3.5 mm *modestus* sp. nov.
- c*². Loræ shorter than clypeus; color brownish ochraceous; length 5.3 mm..... *maquilingensis* sp. nov.
- b*². Pronotum distinctly less than two times as long as vertex; length of vertex into width between eyes little more or less than two times; second apical cell of tegmina pedunculate; scutellum shorter than vertex and pronotum together.
- c*¹. First apical cell about as broad as fourth, normal basally, not touching median vein subapically; ocelli nearer eyes than to median line.
- d*¹. Tegmina without black costa or apical black spot; clypeus white at extreme apex in female; hind margin of anal segment of female very slightly and broadly produced *similis* sp. nov.
- d*². Tegmina with black costa and apical black spot; clypeus all black in female; hind margin of anal segment in female suddenly strongly produced to an emarginate apex.
angustatus sp. nov.
- c*². First apical cell far broader than fourth, basally abnormal, broadly extended on to median vein subapically; ocelli as near to median line as to eyes.
- d*¹. Clavus all yellow, with a median, longitudinal black stripe.
simplex sp. nov.
- d*². Clavus with basal half yellow, and wanting black stripe, sometimes part ivory-white or red-brown..... *coloratus* sp. nov.

***Pedioscopus disjunctus* sp. nov.**

Length, 3.75 mm.; width of head, 1.25 mm. Ochraceous, in the female with black as follows: Two large, round spots on

pronotum, two on apex of head, two just within ocelli, apical margin of front, all of clypeus, and most of loræ and ovipositor; head in male lacking black. Tegmina with basal two thirds of costal vein, and a broad stripe along median vein as far as cross veins, black; corium within the black stripe, and all of clavus except commissure, opaque yellow; between the black stripe and costa, and the region of the apical cells, semitransparent.

Vertex, and face as far as ocelli, finely, transversely wrinkled, genæ coarsely but shallowly, obliquely wrinkled, remainder of face shagreened; head wider than pronotum; length of vertex into width between eyes little more than three times; length at middle distinctly greater than at eyes. Face about as broad as long, distance between ocelli more than three times the distance between ocelli and eyes, and more than three times the width

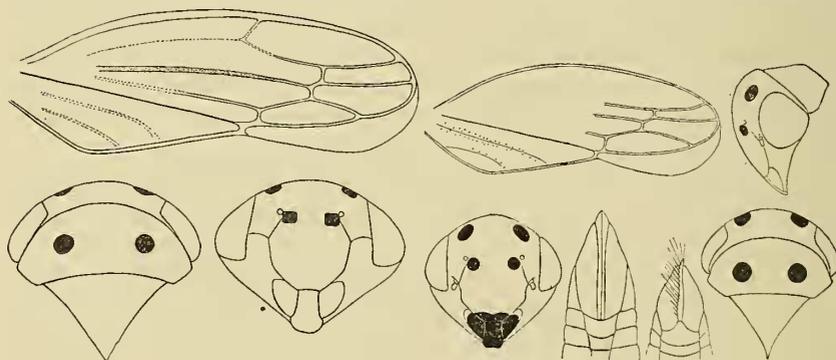


FIG. 11. *Pedioscopus agenor* Kirk.

FIG. 12. *Pedioscopus disjunctus* sp. nov.

of clypeus at base; front slightly broader than long; clypeus broadened apically, and apical margin slightly emarginate; loræ as long as clypeus, and nearly as wide as clypeus at base. Width of pronotum two and a fourth times the length, the length two times that of vertex. Surface of pronotum and anterior field of scutellum very finely subobsoletely shagreened. Scutellum as long as pronotum and about a third of the vertex together; transverse impressed line short, straight; posterior field shallowly, transversely wrinkled. Tegmina with very minute, scattering, dark punctures along the claval veins; veins of corium subobsolete basally; second apical cell sessile. Hind margin of anal segment of female medially long and narrowly produced; pygofers slender and long-haired.

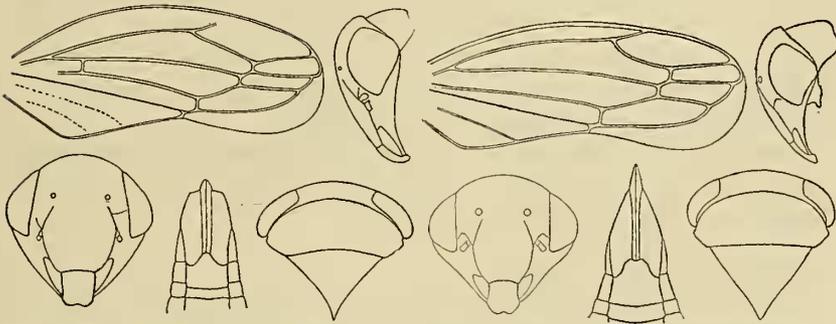
LUZON, Los Baños and Mount Maquiling (coll. Baker).

This species is close to *P. agenor* Kirk. in markings as well as in structure of tegmina.

Pedioscopus modestus sp. nov.

Length, 3.5 mm.; width of head, 1.3 mm. Color ochraceous, pronotum slightly darker, mesopleuræ black-spotted, abdomen more or less dark-colored at base and above, last ventral segment in male brown, hind tibix with large black spots at bases of spines, the second tarsal joint apically brown; tegmina washed with very pale brownish, nearly uniform throughout.

Head finely shagreened throughout, wider than pronotum; length of vertex into width between eyes more than four times; length at middle about the same as at eyes. Face a little longer than broad; distance between ocelli three times the distance between ocelli and eyes and once and a half the width of the clypeus at base; front about as broad as long; clypeus very broad, nearly as broad at base as at apex, the tip emarginate;

FIG. 13. *Pedioscopus modestus* sp. nov.FIG. 14. *Pedioscopus maquilingsensis* sp. nov.

loræ longer than clypeus but not one half as broad. Width of pronotum two and one-third times the length, length slightly more than three times that of vertex. Surface of pronotum and scutellum finely shagreened. Scutellum about as long as head and pronotum together; transverse impressed line evenly and gently arcuate. Tegmina with a few, remote, shallow punctures on clavus; second apical cell sessile. Hind margin of last ventral segment of female broadly long-produced medially, the side plates angled apically; hind margin of anal segment of male truncate.

MINDANAO, Butuan (coll. Baker).

A very common species, but very inconspicuous.

Pedioscopus maquilingsensis sp. nov.

Length, 5.3 mm.; width of head, 1.9 mm. Color ochraceous; the scutellum, except margins, brownish, the basal lunulæ darker, and two brown spots just anterior to lateral extremities

of transverse impression; ovipositor brown. Tegmina semi-transparent, washed with very pale brownish, the veins golden brown.

Head, pronotum, and scutellum finely shagreened; head wider than pronotum; length of vertex into width between eyes four times, the length at middle about the same as at eyes. Face a little longer than broad; distance between ocelli somewhat more than twice the distance between ocelli and eyes and once and a half the width of clypeus at base; front longer than broad; clypeus broad and short, a little broader apically than basally, the tip emarginate; loræ shorter than clypeus and one third as broad. Width of pronotum two and a half times the length, the length about two and a half times that of the vertex. Scutellum as long as pronotum and vertex together; transverse impressed line strongly, angularly bent, open at apex, the lateral limbs strongly arcuated. Tegmina without distinct punctures; second apical cell sessile. Hind margin of anal segment of female broadly, strongly, medially produced, the apex emarginate.

LUZON, Mount Maquiling (*coll. Baker*).

Pedioscopus maquilingensis is the largest species of the genus known in the Philippines. Peculiar to this species are the strongly curved supra-antennal ridges.

Pedioscopus similis sp. nov.

Length, 4.3 mm.; width of head, 1.3 mm. Color ochraceous, yellowish on pronotum and scutellum, basal half of clavus opaque yellow, this area distally irregularly abbreviated; corium semi-transparent, faintly washed with brownish, the basal half of costa golden brown; small, round, blackened areas adjoining ocelli below; clypeus in female black, excepting the extreme tip (concolorous in male); ovipositor brown.

Head, pronotum, and scutellum finely shagreened throughout; head wider than pronotum; length of vertex into width between eyes two and one-fourth times; length at middle distinctly greater than at eyes. Face broader than long; distance between ocelli about three times the distance between ocelli and eyes and once and a third the width of clypeus at base; front about as broad as long; clypeus very broad, as wide basally as apically, the tip emarginate; loræ longer than clypeus and one third as broad. Width of pronotum three times the length, the length one and a fourth times that of the vertex. Scutellum as long as pronotum and two thirds of vertex together; transverse impressed line strongly, angularly bent, open at apex, the lateral limbs arcuate. Tegmina with a few, scattering, minute dark punc-

tures on the opaque yellowish part of clavus; second apical cell pedunculate. Hind margin of anal segment of female longer at middle than at sides and minutely emarginate at apex; hind margin of anal segment of male very strongly rounded, the pygofers thin, straight, and long-haired.

MINDANAO, Dapitan (*coll. Baker*).

A common species at Dapitan and well marked.

Pedioscopus angustatus sp. nov.

Length, 4.5 mm.; width of head, 1.3 mm. Pale brown; small elongated spots extending from ocelli toward scrobes, and clypeus, except base (in female), black; ovipositor black; tegmina semitransparent, washed with pale brown, darker basally, the basal half of costa blackish; a spot at apex of second apical cell smoky; clavus with inner half opaque yellowish, this area

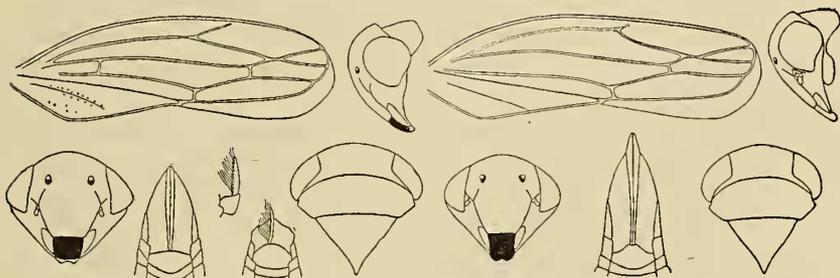


FIG. 15. *Pedioscopus similis* sp. nov.

FIG. 16. *Pedioscopus angustatus* sp. nov.

reaching in an acute point to half the length of the commissure.

Head, pronotum, and scutellum finely shagreened throughout; head broader than pronotum; length of vertex into width between eyes one and four-fifths times, length at middle distinctly greater than at eyes. Face broader than long; distance between ocelli three times the distance between ocelli and eyes and once and a third the width of the clypeus at base; front about as broad as long; clypeus very broad, little widened apically, the tip emarginate; loræ about as long as clypeus and less than a third as broad. Width of pronotum two and three-fifths times the length, the length about one and one-fourth times that of vertex. Scutellum as long as pronotum and one half of vertex together; transverse impressed line strongly, angularly bent, open at apex, the lateral limbs arcuate. Tegmina with a few, scattering, minute, dark punctures on opaque yellowish part of clavus; second apical cell pedunculate. Hind margin of

anal segment of female strongly produced medially and emarginate at apex.

MINDANAO, Dapitan (*coll. Baker*).

Apparently not common. Closely related to *P. similis*.

Pedioscopus simplex sp. nov.

Length, 5.2 mm.; width of head, 1.6 mm. Color yellowish ochraceous; small basal lunulæ on scutellum, irregular spots, including the ocelli, apex of front, loræ except upper extremity, and all of clypeus (in female) black; mesopleuræ black-spotted; ovipositor black; corium semitransparent, washed with very pale brownish, clavus opaque yellow; basal two thirds of costa, a stripe along median vein extending to, and connecting with, a brownish spot in the second apical cell, brachial vein, and a longitudinal stripe passing through the clavus black.

Head, pronotum, and scutellum finely shagreened throughout; head wider than pronotum; length of vertex into width between eyes about two and one-fifth times, the length at middle distinctly greater than at eyes. Face broader than long; distance between ocelli two and a fourth times the distance between ocelli and eyes and once and a half the width of clypeus at base; front much longer than broad, clypeus very broad, broadened apically, the anterior margin only slightly incurved; loræ far longer than clypeus and about one half as broad. Width of pronotum about two and a half times the length, the length about once and two thirds that of the vertex. Scutellum as long as pronotum and a little more than half of vertex together; surface near impressed line broadly depressed, the impressed line angularly bent, apically open, the lateral limbs not arcuate. Tegmina with a few remote punctures on clavus; second apical cell long pedunculate. Hind margin of anal segment produced medially and emarginate at tip as in *P. coloratus*.

MINDANAO, Butuan (*coll. Baker*).

Pedioscopus coloratus sp. nov.

Length, 4.5 mm.; width of head, 1.3 mm. Color of head and all below ochraceous; pronotum and basal field of scutellum pale clear brown; apical field of scutellum yellowish; small, irregular, evanescent spots adjoining ocelli below, lower portion of front, clypeus (with sometimes loræ and lower portion of genæ), and ovipositor black (face concolorous in male); sides of dorsum dark brown; tegmina semitransparent, washed with very pale golden brown, darker basally, area of outer apical cell very clear, basal half of costa broadly, and the commissure, black; basal two thirds of clavus opaque yellow, often margined with ivory-white,

this area posteriorly subtruncate. Extreme tip of corium often more or less smoky.

Head, pronotum, and scutellum finely shagreened throughout; head wider than pronotum; length of vertex into width between eyes two and three-fourths times, length at middle distinctly greater than at eyes. Face as long as broad; distance between ocelli three times the distance between ocelli and eyes and once and a half the width of clypeus at base; front longer than broad; clypeus of medium width, about as wide apically as basally, apex rather sharply emarginate; loræ far longer than clypeus and about one half as broad. Width of pronotum two and a half times the length, the length less than twice that of vertex. Scutellum as long as pronotum and about one half of vertex together; surface broadly depressed at impressed line, this line angulately bent, open at apex, the lateral limbs not arcuate.

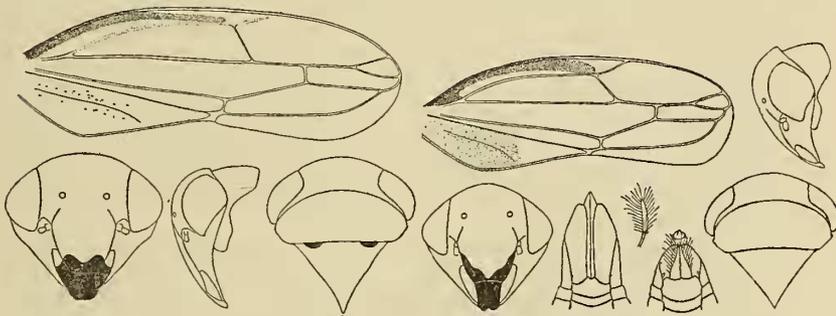


FIG. 17. *Pedioscopus simplex* sp. nov.

FIG. 18. *Pedioscopus coloratus* sp. nov.

Tegmina with a few, scattering, minute dark punctures on colored portion of clavus; second apical cell long pedunculate. Hind margin of last ventral segment of female long produced medially and slightly emarginate or entire at tip. Hind margin of anal segment of male sinuate, the pygofers very broad at base, narrowing to acute tips, the outer margins long-haired.

LUZON, Los Baños, Malinao; MINDANAO, Butuan (*coll. Baker*).

A common, widely distributed, and very variable species. The median vein of corium is often less darkened, and the yellow of clavus varies in intensity, sometimes being almost absent. Two very distinct varietal forms are worthy of special recognition. One of these (from Butuan, Mindanao) has very broad black commissural margins to anal portion of clavus and heavy black basal lunulæ on the scutellum. This may be designated as var. *mindanaensis* nov. The other (also from Butuan) has the anal two thirds of colored portion of clavus bright red-brown and the

remainder of this area—a broad band along claval suture—ivory-white. This form may be designated var. *bicolorata* nov.

This species must be nearly related to *Idiocerus unimaculatus* Melichar, which is probably congeneric with it.

Genus IDIOSCOPUS novum

As a generic group *Idioscopus* is as distinct as *Busonia*, *Chunra*, *Pedioscopus*, etc., and I am surprised that Distant did not separate it. The habitus is not at all that of typical *Idiocerus*, the head being larger, narrower, and longer as seen from above, usually distinctly longer at middle than at eyes, and long in proportion to width between eyes. The first apical and first subapical cells are normally confluent.

Type, *Idiocerus clypealis* Leth. as here described.

Synopsis of the Philippine species of Idioscopus.

- α^1 . Length of pronotum about three times that of vertex; width of vertex between eyes more than four times the length; two black spots on scutellum anteriorly, two spots on anterior margin of pronotum, and two on anterior margin of head; clypeus white apically in the female *palawanensis* sp. nov.
- α^2 . Length of pronotum little more or less than two times that of vertex; width of vertex between eyes less than three times the length; clypeus all black in female.
- b^1 . Vertex and pronotum in male without spots; scutellum with two black spots anteriorly *clypealis* Leth.
- b^2 . Vertex in male with two black spots, pronotum with two spots behind anterior margin; scutellum basally with a single, large, median black spot *tagalicus* sp. nov.

Idioscopus palawanensis sp. nov.

Length, 4.25 mm.; width of head, 1.5 mm. Ochraceous, olive-tinted on vertex and pronotum; basal field of scutellum reddish brown; large basal lunulæ on scutellum, small pronotal lunulæ back of eyes, two spots on anterior margin of head, small dots inclosing ocelli, basal two thirds of clypeus, spot on mesopleuræ, and the ovipositor black; antennal scrobes darkened; tegmina golden brown, paler apically, the region of outer apical cell clearer; costa broadly, alternately yellow and brown to the outer apical cell.

Vertex, and face to just below upper black spots, finely, transversely striate, remainder shagreened; head wider than pronotum; length of vertex into width between eyes four and one-third times; length at middle nearly the same as at eyes. Face slightly longer than broad; distance between ocelli two and a half times the distance between ocelli and eyes and twice the width of

clypeus at base; front slightly broader than long; clypeus of medium width, about as wide basally as apically, apex truncate; loræ much longer than clypeus and two thirds as broad. Width of pronotum two and a half times the length, the length slightly less than three times that of the vertex. Scutellum as long as pronotum and about one half of the vertex together; transverse impressed line obtuse-angularly bent, the apex open, the lateral limbs not arcuate; surface just posterior to impressed line with a few, shallow, transverse wrinkles. Tegmina distinctly thickened and roughened on basal half, this area having numerous strong punctures along the veins. Hind margin of anal segment slightly produced medially.

PALAWAN, Puerto Princesa (coll. Baker).

Idioscopus clypealis Leth.

Colors as described by Distant. He does not state that it is the male which lacks the two spots on anterior margin of head,

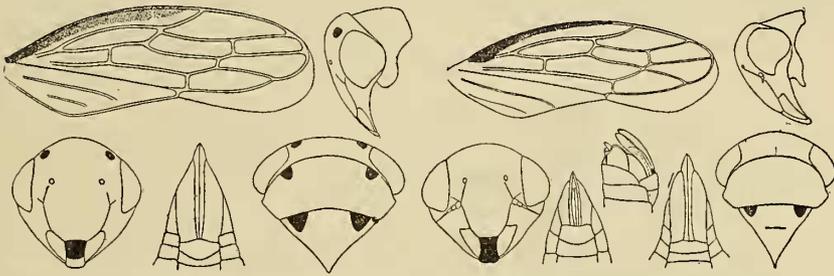


FIG. 19. *Idioscopus palawanensis* sp. nov.

FIG. 20. *Idioscopus clypealis* Leth.

this being a sexual character. The clypeus in my specimens is uniformly black. The female also possesses two small black spots between the ocelli, as shown in Distant's figure, where the ocelli, laterad of the spots, are not shown.

Vertex, and face to just below upper black spots, finely, transversely striate, remainder shagreened; head wider than pronotum; length of vertex into width between eyes two and one-fourth times, length at middle distinctly greater than at eyes. Face somewhat broader than long; distance between ocelli two and two-thirds times the distance between ocelli and eyes and about twice the width of clypeus at base; front longer than broad; clypeus of medium width, slightly broader apically than basally, tip gently emarginate; loræ far longer than clypeus and nearly as broad. Width of pronotum little more than twice the length, the length little more than twice that of vertex. Scutellum as long as pronotum and three fifths of the vertex together; trans-

verse impressed line very obtusely bent, open apically, the lateral limbs not arcuate, the surface just posterior to this with a few, shallow, transverse wrinkles. Tegmina with subobsolete punctures along the veins on basal half, those on the yellowish costa minute and dark. Hind margin of anal segment of female gently bisinuate to subtruncate, in the male subtruncate. Pygofers slender at base, compressed, subspatulate.

LUZON, Los Baños (*coll Baker*). Occurring in swarms on mango flowers and probably fully as injurious as *Chunra niveosparsa*.

Idioscopus tagalicus sp. nov.

Length, 5 mm.; width of head, 1.8 mm. Ochraceous, olive-tinted on pronotum, scutellum yellow; a large, median, basal spot on scutellum, two small spots near anterior margin of pro-

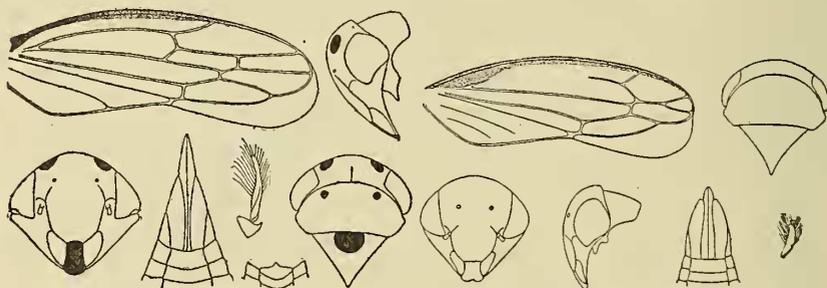


FIG. 21. *Idioscopus tagalicus* sp. nov.

FIG. 22. *Idiocerinus melichari* sp. nov.

notum (sometimes absent), two large spots on anterior margin of head, clypeus (concolorous in male), and ovipositor black; corium semitransparent, faintly tinted with brownish, more or less smoky-tipped, the middle third of costa and a broad stripe adjoining claval commissure and reaching half the length of clavus black or piceous; clavus opaque yellow; punctures along veins few and shallow on the basal half of tegmina.

Vertex, and face nearly to ocelli, finely, transversely striate, remainder shagreened; head wider than pronotum; length of vertex into width between eyes two and a half times, the length at middle distinctly greater than that at eyes. Face slightly broader than long; distance between ocelli two and one-third times the distance from ocelli to eyes and two and a half times the width of clypeus at base; front about as broad as long; clypeus narrowed to base, the apex suddenly broadened, the tip broadly, evenly rounded; loræ longer than clypeus and broader than clypeus at middle. Width of pronotum two and one-fourth

times the length, the length a little less than two times that of the vertex, surface uniformly finely shagreened. Scutellum as long as pronotum and about one fifth of the vertex together; surface coarsely, irregularly shagreened on basal field; transverse impressed line obtuse-angularly bent, open at apex, lateral limbs not arcuate. Hind margin of anal segment of female subtruncate, in male medially, narrowly, acutely produced. Pygofers twisted, apical half uniformly narrowed.

LUZON, Mount Maquiling and Mount Banahao (*coll. Baker*).

Genus *IDIOCERINUS* novum

The two species here described under the new genus *Idiocerinus* present a form of front not noted by me in any other Philippine idiocerine insects. The clypeus is shorter for its width than is to be found elsewhere. Otherwise it is much more like *Idioscopus* and *Pedioscopus* than like typical *Idiocerinus*. It includes the most delicately beautiful idiocerine insects in the Philippine fauna. *Idiocerus stali* of Fieber is apparently to be referred here.

Type, *Idiocerinus melichari* sp. nov.

Synopsis of the Philippine species of Idiocerinus.

*a*¹. Head and pronotum shining ochraceous, the latter and scutellum tinted with reddish brown; tegmina smoky, the veins concolorous; hind margin of anal segment of female truncate, the side plates not carinate..... *melichari* sp. nov.

*a*². Head and pronotum shining pearly; tegmina subhyaline, the veins basally orange; hind margin of anal segment of female medially produced and emarginate, the side plates strongly carinate.

nacreatus sp. nov.

Idiocerinus melichari sp. nov.

Length, 4 mm.; width of head, 1.3 mm. Ochraceous, tinted with reddish brown on pronotum and scutellum. Tegmina semi-transparent; corium very slightly tinted with pale brownish, only the inner veins distinct, the median vein broadly blackened throughout its length; clavus opaque golden brown; punctures obsolete.

Vertex, and face to near ocelli, sharply and strongly cross striate, the striæ on face strikingly oblique (a rare condition in the *Idiocerini*); length of vertex into width between eyes about five times, the length at middle very slightly greater than that at eyes. Face about as broad as long; distance between ocelli once and a half the distance between ocelli and eyes and about once and a half the width of clypeus at base; clypeus very short, broadened toward tip, where it is slightly emargi-

nate; loræ as long as clypeus, about two thirds as wide, and with outer margin incurved. Width of pronotum two times the length, the length three and a half times that of the vertex; surface very finely shagreened. Scutellum very finely shagreened, the impressed line very inconspicuous and nearly straight; the length equaling that of pronotum; corium with second apical cell pedunculate. Hind margin of anal segment of female truncate. Pygofers of male with slender bases, gradually narrowed apically where the tip is upturned.

LUZON, Mount Maquiling (coll. Baker).

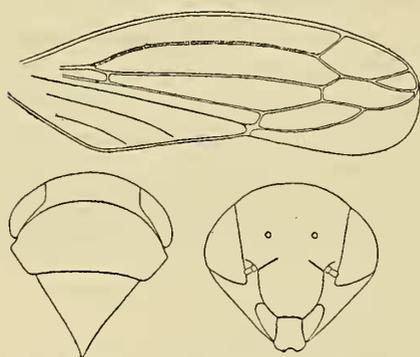


FIG. 23. *Idiocerinus nacreatus* sp. nov.

Idiocerinus nacreatus sp. nov.

Length, 4 mm.; width of head, 1.3 mm. Head, thorax, and legs pearl white; tegmina semitransparent, with basal third washed with orange, postnodal veins orange.

Head sculptured as in *I. melichari*; length of vertex into width between eyes about three and one-third times, length at middle distinctly greater than at eyes. Face

about as broad as long; distance between ocelli once and a half the distance between ocelli and eyes and once and a half the width of clypeus at base; clypeus as in *I. melichari*; loræ as long as clypeus and about two thirds the width, the outer margins not incurved. Width of pronotum two and a fourth times the length, the length two and a half times that of vertex; surface finely shagreened. Scutellum as long as pronotum and one half of vertex together, sculptured as in *melichari*. Corium with second apical cell pedunculate. Genitalia of female as in *melichari*, but side plates strongly, discally carinate.

LUZON, Mount Maquiling (coll. Baker).

ILLUSTRATIONS

TEXT FIGURES

- FIG. 1. *Iposcopus distanti* sp. nov.
2. *Iposcopus breviceps* sp. nov.
3. *Ipo conferta* Kirk.
4. *Ipocerus kirkaldyi* sp. nov.
5. *Chunra niveosparsa* Leth. var. *lagunensis* var. nov.
6. *Chunra niveosparsa* Leth. var. *palawanensis* var. nov.
7. *Chunra niveosparsa* Leth. var. *philippinensis* var. nov.
8. *Busonia scutellaris* sp. nov.
9. *Busonia mindanaensis* sp. nov.
10. *Balocha busonioides* sp. nov.
11. *Pedioscopus agenor* Kirk.
12. *Pedioscopus disjunctus* sp. nov.
13. *Pedioscopus modestus* sp. nov.
14. *Pedioscopus maquilingensis* sp. nov.
15. *Pedioscopus similis* sp. nov.
16. *Pedioscopus angustatus* sp. nov.
17. *Pedioscopus simplex* sp. nov.
18. *Pedioscopus coloratus* sp. nov.
19. *Idioscopus palawanensis* sp. nov.
20. *Idioscopus clypealis* Leth.
21. *Idioscopus tagalicus* sp. nov.
22. *Idiocerinus melichari* sp. nov.
23. *Idiocerinus nacreatus* sp. nov.